

Title (en)

EMITTER BALLAST BYPASS FOR RADIO FREQUENCY POWER TRANSISTORS

Title (de)

EMITTERBALLAST UEBERBRUECKUNG FÜR RADIOFREQUENZ-LEISTUNGSTRANSISTOREN

Title (fr)

CONTOURNEMENT DES RESISTANCES DE PROTECTION D'EMETTEUR POUR TRANSISTORS DE PUISSANCE HAUTE FREQUENCE

Publication

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Application

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Abstract (en)

[origin: WO9626548A1] An apparatus and method are provided for bypassing the emitter ballast resistors of a power transistor, thereby increasing transistor gain. In a power transistor of the interdigitated type, bypassing the emitter ballast resistors requires bypassing each individual ballast resistor with a capacitor in parallel. Bypassing is therefore done on the silicon chip. More particularly, in accordance with one embodiment of the invention, an RF power transistor includes a silicon die, an emitter ballast resistor (13) formed on the silicon die, and a bypass capacitor (40) formed on the silicon die and connected in parallel with the emitter ballast resistor (13). The resistor may be a diffused resistor, and the capacitor may be a metal-on-polysilicon capacitor. In accordance with another embodiment of the invention, a method is provided for increasing the gain of an RF transistor formed on a silicon chip and having an emitter ballast resistor formed on the silicon chip, in which a capacitor is formed on the silicon chip and connected in parallel with the ballast resistor.

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